REMARKS

Claims 1-34 are pending in the present application. No claims have been amended herein, and no claims have been cancelled. Therefore, claims 1-34 will be pending in this application. Applicants believe that the present application is now in condition for allowance, which prompt and favorable action is respectfully requested.

Claim Rejections – 35 USC § 102

Claims 1-14, 17-22 and 27-34 are rejected under 35 USC § 102(b), as being anticipated by Cioffi et al. (U.S. Patent No. 5,995,567) (hereinafter "Cioffi"). The rejections are respectfully traversed and reconsideration is requested.

Independent claim 1, for example, recites recovering first and second data streams transmitted *simultaneously via a wireless channel* in a wireless communication system. The embodiments recited by independent claim 1 are further capable of providing first, second and third channel estimates of the wireless channel. In exemplary embodiments, the first and second data streams are a base stream and an enhancement stream, respectively

Cioffi is directed to a receiver system for high-speed communications having a radio frequency (RF) noise canceller. The system of Cioffi, however, only discloses receiving signals via twisted-pair phone lines 104, which are coupled to a transformer 102. (See Cioffi, column 5, lines 29-32, and Fig. 1). In fact, the only wireless device discussed in Cioffi is the potential RF noise source 106, which may be amateur radios, or other sources (e.g., bridge taps or crosstalk). (See Cioffi, column 3, lines 28-38, and Fig. 1). There is no recovery of information from this wireless source. Rather, Cioffi seeks to eliminate the influence of this source. Therefore, the system described in Cioffi is not configured to recover data streams sent via a wireless

communication system, by providing first, second and third channel estimates of the wireless channel, as recited in independent claim 1, for example.

Applicant notes that the Examiner may only reject a claim under 35 U.S.C. §102 if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The **identical invention** must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (emphasis added). (See MPEP §2131). In this case, the cited reference does not teach or even suggest recovering first and second data streams transmitted simultaneously via a wireless channel in a wireless communication system, as recited in independent claim 1, for example. Thus, it is respectfully submitted that the rejections based on 35 U.S.C. § 102 should be withdrawn.

Furthermore, independent claim 1 recites deriving a first channel estimate for the wireless channel based on received symbols; performing detection for the first data stream using the first channel estimate; deriving a second channel estimate based on the detected first data stream; deriving a third channel estimate based on the first and second channel estimates; and performing detection for the second data stream using the third channel estimate. According to the embodiment of the present invention recited in independent claim 1, first and second data streams are transmitted simultaneously, and thereafter the first data stream (e.g., the base stream) is detected using the first channel estimate. A subsequent second channel estimate is derived, and the first and second channel estimates are combined, thereby deriving a third channel estimate. Detection is then performed using the third channel estimate to detect the second data stream (e.g., the enhancement stream). (See paragraphs [0006] and [0007] of the present specification).

Cioffi discloses a system in which a transformer 102 provides a differential output signal v_d 108 and a common-mode signal v_c 110 (i.e., a reference noise signal). RF canceller 112 receives the differential signal v_d 108 and common-mode signal v_c 110 and operates to cancel an unwanted noise component, thus outputting a noise-cancelled differential signal v_f 114. Thereafter, v_f 114 is converted to a digital noise-canceled differential signal v_{fd} 118 and is sent to a digital signal processor (DSP) 120 for decoding to recover data 122. (See, Cioffi, column 5, line 54, to column 6, line 14).

DSP 120 also produces an update control signal 124 which is fed back to the RF canceller 112. The update control signal 124 operates to either enable or disable the RF canceller 112 to control the updating of its noise cancellation characteristics (using internal filter parameters), thus providing the ability to rapidly adapt to changes in the RF noise. (See, Cioffi, column 6, lines 14-31).

It is unclear from the Office Action, but it is assumed from the Examiner's citation of column 6, lines 14-20, of Cioffi, that the Examiner has interpreted update control signal 124 to be identical to the second data stream detected using the third channel estimate, as recited in independent claim 1. However, the second data stream, according to embodiments of the present invention, is a stream transmitted simultaneously with the first data stream (e.g., the base stream), and is detected using the third channel estimate.

Therefore, the second data stream, in light of the present specification, should not be interpreted to be identical to an update control signal 124, as described in Cioffi, which is not a data stream at all, in the context of the present invention. Further, the second data stream, as recited in independent claim 1, is transmitted *simultaneously* with the first data stream. This is clearly not the case with the update control signal 124. Any resultant data stream that is output in response to the update control signal 124 of Cioffi could not have been transmitted

simultaneously with the original data stream. In fact, according to Cioffi, update control signal 124 is preferably periodically activated during breaks ("quiet periods") in the reception, and is not at all related to a simultaneously-transmitted second data stream defined by embodiments of the present invention. (See, Cioffi, column 6, lines 24-26).

Therefore, it is respectfully submitted that the cited reference fails to teach or suggest the features of independent claim 1 described above. Applicant notes that the remaining pending independent claims recite features similar to those described above for independent claim 1. For example, independent claim 33 explicitly recites recovering *a base stream and an enhancement stream* transmitted simultaneously; and performing detection for the enhancement stream, with the estimated interference from the base stream canceled and using the third channel estimate, to obtain detected symbols for the enhancement stream. As a result, it is respectfully submitted that all the pending independent claims patentably distinguish over the cited art. The pending dependent claims inherit the patentability of their respective independent claim and, thus, patentably distinguish over the prior art for at least the reasons provided herein.

Claim Rejections – 35 USC § 103

Claims 15, 16 and 23-26 are rejected under 35 USC § 103(a), as being unpatentable over Cioffi in view of Isaksson et al. (U.S. Patent No. 6,181,714) (hereinafter "Isaksson"). The rejections are respectfully traversed and reconsideration is requested.

Dependent claims 15, 16 and 23-26 depend directly or indirectly from independent claim 1, which patentably distinguishes over the Cioffi for the foregoing reasons. It is further submitted that Isaksson fails to cure the deficiencies of Cioffi set forth above. Therefore, it is respectfully submitted that dependent claims 15, 16 and 23-26 patentably distinguish over the cited references alone or in combination.

CONCLUSION

In light of the remarks contained herein, Applicants submit that the application is in condition for allowance, for which early action is requested.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

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